

REMARKS

Claims 1-19 are all the claims pending in the application. By this amendment, claims 1-4, 6-8 and 11 are amended, and new claims 12-19 are added. Withdrawal of the rejections and allowance of the claims is respectfully requested in view of the foregoing amendments and following remarks.

Applicant thanks the Examiner for the acknowledgement of receipt of certified copies of the foreign priority documents, and for providing initialed copies of the IDS documents previously submitted, indicating consideration of the references cited therein.

I. The Claims are not anticipated

Claims 1-4 and 8-11 stand rejected under 35 U.S.C. § 102(e) due to alleged anticipation by Handelman (U.S. Patent No. 6574018). Applicant respectfully submits that Handelman fails to disclose all of the claimed combinations of features, for at least the reasons discussed below.

The presently claimed invention is directed to use of different modulation formats for different channels, based on an impairment characteristic. More specifically, the claimed invention requires a plurality of receivers, transmitters and network connections, each network connection having an individual signal impairment characteristic. The receivers and transmitters employ a plurality of different modulation formats, and are assigned to the network connections as a function of the individual signal impairment characteristics of each of the network connections. For example, modulation formats may include RZ, NRZ, PSK, DPSK, PSBT and others. Applicant respectfully distinguishes the modulation *format* from the bitrates and carrier wavelengths.

Handelman discloses limiting the number of channel wavelengths and equalizing rates of data carried over the channels to reduce interference and improve performance. However, applicant respectfully submits that Handelman does not disclose or even suggest that the *format* of modulation is different for its receivers and transmitters. Applicant respectfully submits that Handelman is directed to adjusting bit rate, but is silent with respect to format.

Thus, applicant respectfully submits that Handelman fails to disclose or suggest a plurality of receivers and transmitters that employ different modulation formats, as recited in independent claims 1 and 11. Applicant respectfully submits that dependent claims 2-4 and 8-10 are also allowable for at least the foregoing reasons, as well as by virtue of their dependence from independent claim 1. Accordingly, applicant respectfully requests withdrawal of the rejection, and allowance of the claims.

II. The Claims would not have been obvious

Claims 9-10 stand rejected under 35 U.S.C. § 103(a) due to alleged obviousness based on a proposed modification of Handelman by the Examiner. Applicant respectfully submits that claims 9-10 are allowable by virtue of their dependency from independent claim 1, which is allowable for at least the reasons discussed above.

Claims 1-5, 7 and 9-11 stand rejected under 35 U.S.C. § 103(a) due to alleged obviousness based on the Examiner's proposed combination of Bergano (U.S. Patent No. 5946119) in view of the Bakhshi article. Applicant respectfully submits that the Examiner's proposed combination of references fails to disclose or suggest all of the claimed combinations of features, as required for a *prima facie* obviousness determination under 35 U.S.C. § 103(a).

For at least the following reasons, applicant respectfully requests withdrawal of the rejections and allowance of the claims.

As explained above, claims 1 and 11 require that the difference transmitters and receivers have different *formats*. Further, claims 1 and 11 require that the receivers and transmitters are assigned to the network connections as a function of the individual signal impairment characteristics. A parameter corresponding to the signal impairment characteristic of the network connections is stored in a memory. The modulation format (and therefore the specific transmitter) is selected as a function of the signal impairment characteristic that is determined from the memory.

Bergano discloses a method and apparatus for long-distance WDM transmission including optimizing the transmitted signal format of each optical channel. The modulation format of each channel is optimized for the particular characteristics of a given channel, and varying the amount of synchronous amplitude, phase and/or polarization modulation placed on each channel. To accomplish this, Bergano discloses calculation of the necessary terms using the disclosed equations. As a result, a great deal of computation is required to accomplish this optimization.

Applicant respectfully submits that Bergano does not disclose the storage of a parameter corresponding to the impairment characteristic in a memory, as recited in claims 1 and 11. Because Bergano does not disclose or even suggest storing this parameter in memory, it is necessary to perform the calculations of Bergano each and every time. Applicant respectfully submits that the process and structure of Bergano is thus substantially different from that of the subject matter recited in claims 1 and 11.

Additionally, the Examiner has admitted that Bergano does not disclose or suggest assignment of receivers and transmitters to network connections as a function of the signal impairment characteristics. Applicant respectfully submits that as explained above, Bergano does not disclose storage of impairment characteristic information in a memory that would permit such an assignment. Therefore, Bergano provides no motivation or suggestion or teaching for such an assignment, as Bergano performs calculation each time based on the disclosed equations.

To overcome this admitted deficiency of Bergano, the Examiner proposes to combine Bakhshi with Bergano. The Examiner has disclosed that Bergano and Bakhshi have a “common inventor”. Applicant notes that (a) Bakhshi is not being offered as an invention but only as prior art, and (b) the presence of common authors in these two references is not relevant to the present rejection and examination of these claims. Alternatively, applicant respectfully requests further clarification of this statement by the Examiner.

Turning to the substance of the proposed combination, the Examiner asserts that Bakhshi cures the admitted deficiency of Bergano by the disclosure of the “conclusions” at page 3 of Bakhshi. Applicant respectfully disagrees with the Examiner’s characterization of Bakhshi. For example, applicant respectfully submits that Bakhshi discloses that CRZ is better for edge channels at long distances. However, applicant respectfully submits that such a disclosure does not include the assignment of receivers and transmitters as a function of impairment characteristic. Applicant respectfully submits that the disclosure in Bakhshi simply identifies which format is preferable, but does not provide any further disclosure as to transmitters and receivers, and how they are used.

Claims 2-5, 7 and 9 depend from independent claim 1, and are believed to be allowable at least by virtue of their dependency therefrom.

Further, applicant respectfully submits that the Examiner's proposed combination fails to disclose or suggest the lightpath provisioning unit recited in claim 4. While the Examiner states that a lightpath provisioning unit is well known to manage various devices, the Examiner has provided no basis for this statement. Further, even if, *arguendo*, the Examiner's statement was true, the Examiner still has not shown that the proposed combination teaches or suggests selecting one of the transmitters as a function of the impairment parameter corresponding to a desired network connection, as recited in claim 4.

Claim 6 stands rejected under 35 U.S.C. § 103(a) based on the Examiner's proposed combination of Bergano and Bakhshi in view of Suzuki (U.S. Patent No. 5524144). Applicant respectfully submits that claim 6 is allowable for at least the reasons discussed above with respect to claim 1, from which claim 6 depends. Accordingly, applicant respectfully requests withdrawal of the rejection, and allowance of claim 6.

Therefore, applicant respectfully requests withdrawal of the obviousness rejection, and allowance of the claims.

III. New Claims

By this amendment, new claims 12-19 are added. Claims 12-19 depend from independent claims 11, and are believed to be allowable for at least the reasons discussed above with respect to independent claim 11. Applicant respectfully requests allowance of claims 12-19.

IV. Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,

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